NEPRA PacketEar
— Newsletter of the New England Packet Radio Association —
PacketEar #47 February 1989

A VISIT FROM

HANK OREDSON, WORLI

by Herb Salls, WB1DSW

New Years Eve is a time for celebrating. At WB1DSW it was truly a time to celebrate in that Hank, WORLI, had come to New England to witness the graduation of his daughter at U. Mass and had also expressed a desire to visit with us in East Kingston, NH. Hank and his lovely wife Ilze arrived at 11:30 AM on Dec. 31, 1988 and we spent what turned out to be one of the most pleasurable, informative and educational experiences I've ever had the opportunity to undertake. Completing the group in attendance was Syl - N1DKF, Bob - KQ1K, Steve - KA1MGO, and Rich - NM1D. What I'll try to do here is synthesize seven hours of technical conversation and informal dialogue to give you the reader some insight into where packet radio is now and where it may be going.

First, by way of background, Hank is the author of the now famed WORLI MailBox software in use throughout the packet world today. I met Hank about four years ago as he toiled laboriously over his first MailBox program on the venerable Xerox 820, an 8-bit CP/M-based system available for what seemed mere pennies on the dollar. Hank's work in the CAD/CAM arena took him from Westford, MA to Santa Cruz, California. After a short time there, however, a layoff occurred at Applicon, his old employer. So, he and two of his friends decided to start their own firm supplying data and specifications for electronics parts and subassemblies. Standard Engineering Data Company has grown in less than two years from a startup firm with each of the partners working out of their home to a modest, yet aggressive company employing 11 full time personnel with offices located not far from Hank's home in Santa Cruz, CA.

Admittedly, the first few months of operation were indeed fraught with the woes of any fledgling group. It was during these "lean" times that Hank devoted much time and effort to developing a newer, better program that could run on just about any flavor of computer (he writes all of his code in C)—but a computer with much more potential than the Xerox 820. Those of us who recall those days know that it seemed as though a new version was popping up every other day. So, as things have progressed the new company is doing fine and he now has brought forth a program (version 9.03) incorporating enhancements suggested from SYSOPs and users everywhere.

Let's join the conversation now as the *PacketEar* asks "the Master" a few questions on a wide variety of topics...

PE: How are things going on your side of the country in terms of the network your folks are putting together?

WORLI: Well, not too well in my area actually. Northern California LAN frequencies are fairly well out of control unfortunately. We have some real problems in terms of overall network speed versus the number of packet users on the air at any given time. Many of the network enhancements we all looked forward to from NetROM haven't come into being with hidden transmitters and faulty radios being among the top problems.

PE: Is anyone doing anything about the situation?

WORLI: I suppose just as any network has we have some political hurdles to be dealt with. Mountaintops, while not scarce, are difficult to acquire due to the tremendous number of other services (ham and non-ham) in use. Then, too, like many other networks, we have the "doers" and "users"—the doers are so few in number and can't get enough done fast enough that the users do most of the complaining.

There are some moves afoot to experiment with some of the new 9600-baud modems available from England. Some spare radios and modem kits are being prepared for testing but right now I'm not exactly sure where all that is. Getting the network to move at a faster speed has got to be an absolute priority.

PE: Describe briefly the size of the network at this time.

WORLI: You're looking at 24 active NetROM nodes. In my own small area there are about six active fulltime MailBox systems running. I have a hard time keeping track of what numbers are out there beyond the valley I live in but it seems as though we're sprouting new systems each day.

Hank quickly looked at a New England Backbone map and commented: Gee, a lot has changed since I left... This does look impressive! Does it work? I would say New England and the East Coast has a good looking network—much better than ours given the current state of affairs.

PE: In terms of raw numbers, how many of your "MailBox" systems (roughly) would say are in operation today?

WORLI: Worldwide? About 2000. That's a seat-of-the-pants guess. Oh, by the way, you can expect to see the first of a few Russian MailBox systems operating under club callsigns, appearing within the next few weeks.

PE: Glasnost

WORLI: Indeed!

I know there are over 350 Mailboxes running now in Japan alone.

PE: That's a sizeable number. Tell us, are the Japanese networks different? Are they better, worse, the same?

WORLI: Far superior, in fact. It is my feeling that the Japanese are doing their network the "right" way and the effort put into organization, control and implementation is paying off handsomely from what I see and gather.

PE: Well, please, tell us their secrets!!

WORLI: First, they have assigned a Network Administrator for each of their sectors. He/she is given almost total reign in terms of setting things like individual station parameters, NetROM and digipeater parameters, MailBox behaviors, frequency allotments etc. If someone doesn't want to play by the rules, that station is excluded from MailBox accesses and is generally considered "persona non grata" until he changes his thinking.

Another thing they do is wisely allocate large chunks of frequency spectrum for packet use. They have carved out many channels on 2 meters with the standard spacing. Further, they have alloted 200 channels in the 440 to 450 range. Each block of 100 channels is spaced at least 100 Khz apart giving them the ultimate in flexibility later on when faster speeds become widely available. The Japanese really know how to organize—they multichannel everything. They are also aggressively moving into the 1296 Mhz range and doing so now so that the sites are available and in use for later upgrading.

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LOCAL PACKETEERS RENDER ASSISTANCE DURING ARMENIAN EARTHQUAKE

Several local amateurs were drafted to provide communications for health and welfare traffic in the aftermath of the Armenian earthquake. A packet radio circuit was established from the Armenian Relief Center in Watertown to several HF sites for transmission to the earthquake region. Local hams providing support included Jack Moran, W1ZLG, HF link; Dave Moran, KA1PHP, principal operator in Watertown; Neil Grossman, equipment loan and technical assistance. The station in Watertown was set up by Dave Crocker, W1TMO, and Jim Bond, KA1ANT, using equipment graciously loaned by Needham Civil Defense. KA1ICR, the digipeater operated by Dave Oland in Arlington, proved a important link in reaching out from the station in Watertown.

An interesting feature of the operation was the creation of a special database program and message extraction mechanism. This allowed direct transfer of query information from the database out over the packet circuit without requiring any rekeyboarding, almost a necessity because of the unfamiliarity of most our operators with the spelling of Armenian names and places.

In addition to local HF activity, packet traffic was also sent on to hams in Ohio where it was placed on an Amtor circuit directly to Europe. The following Associated Press report (dated December 23, 1988) was forwarded from KB1PJ in Ohio.

Cleveland — Two amateur radio operators took radio and computer equipment to Moscow to help transmit information about earthquake-ravaged Armenia between the Soviet Union and the United States, operators said yesterday.

Al Vayhinger of Connersville, Ind. and Charles Sheffer of Apalachicola, Fla. traveled to Moscow this week to help with the relay of information, said David Speltz of Cleveland. Soviet authorities say they have evacuated 92,000 people.

Vayinger and Sheffer said in their telephone interviews from their homes yesterday they had hoped to set up the two communications networks they took with them, but the Soviets decided to do so themselves.

They also hoped that Sheffer could go to Armenia, but the two said they instead spent two days in Moscow before returning to the United States on Tuesday.

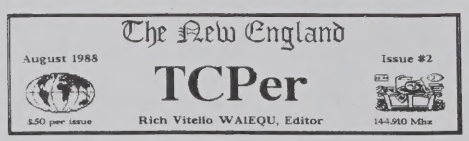
In Moscow, basically their priorities did change, Sheffer said. They told us they had rescuers falling all over each other down there. Their hams are perfectly capable of knowing how to use the equipment. We had all the instructions.

The trip was arranged by Glenn Baxter, head of the International Amateur Radio Network, operators said. But Vayhinger and Sheffer first came to Cleveland to learn to use a system set up at the local Veteran's Administration Hospital to communicate with the Soviet Union about the earthquake victims, Speltz said.

A group of Northeast Ohio ham operators obtained donations of equipment that enabled them to use a portable computer and radio equipment to send messages to Great Britain, Speltz said. In turn, volunteers in Great Britain have been reading the messages to ham radio operators in the Soviet Union because the Soviet Union did not have a computer system set up to receive the information, he said.

The Clevelanders are using the system strictly to find out about victims and survivors for relatives in the United States. The computer eliminates confusion over the spelling of names and enables messages to be transmitted more quickly than they can be orally, he said.

Speltz said he expects Soviet amateur radio operators soon to be setting up the equipment delivered by Vayhinger and Sheffer, which will enable that country to receive the computerized messages and respond in kind.



Shown above is the heading for the newsletter of the New England TCPers, a new group that has formed within the packet community. For those of you not yet familiar with the term, TCP/IP stands for Telenet Communications Protocol/Internet Protocol. The amateur version is an adaption of a popular set of protocols used for computer communication by Phil Karn, KA9Q, and others. Software versions are currently available for both the Macintosh and IBM compatibles. TCP/IP is of interest for a number of reasons, among which is its ability to support multiple simultaneous sessions not only with multiple users, but also with a single user. This means that you can be carrying on a keyboard-to-keyboard session and at the same time be transferring a file, several files, files in both directions, etc. Intrigued? To find out more about TCP/IP you may wish to subscribe to the New England TCPer. Contact: New England TCPer, c/o Rich Vitello, WA1EQU, 8 Denfield Road, Westboro, MA 01581. I believe an annual subscription is now $12, but you'd better check with Rich.

RACES EARTHQUAKE DRILL SCHEDULED FOR APRIL 3RD

User and Sysop cooperation is requested in reducing normal traffic on 145.01 on 4/3/89 between the hours of 1900 and 2130, local time.

RE: REMAIL.DOC

by Jack, N1BGG

A facility for handling "book" mail (such as announcements or book traffic) has tentatively been installed at the N1BGG BBS. It works as follows:

1) It applies only to mail addressed in the following manner

SP or SB LISTFILE @ N1BGG.

TITLE should also contain name of intended recipient, i.e. (ALL) then the TITLE of the message.

The following lists are supported

NEBBS	New England BBS's
SYSNE	SYSOP New England
NHBBS	New Hampshire BBS's
SYSNH	SYSOP New Hampshire
MABBS	Massachusetts BBS's
SYSMA	SYSOP Massachusetts
RIBBS	Rhode Island BBS's
SYSRI	SYSOP RHode Island
MEBBS	Maine BBS's
SYSME	SYSOP Maine
VTBBS	Vermont BBS's
SYSVT	SYSOP Vermont
CTBBS	Connecticut BBS's
SYSCT	SYSOP Connecticut

Each piece of mail is remailed to one or more addressees identified in the listfile requested in the message header.

2) After a test period, all incoming mail for LISTFILES will be automatically remailed in the above fashion, perhaps with a service message to the originator. FOR THE TIME BEING, however, remailing will only happen as a result of sysop intervention.

3) You are welcome to use the service (let me know if problems occur, or, for that matter, if they don't). Alternatively, I will periodically (daily?) remail all mail.

4) BE CAREFUL about overloading BBSs with automatically generated mail.

5) Suggestions, complaints, and other feedback are of course encouraged. I've installed this feature as a standalone program called by the forward file for both the WORLI 6,7,8.xx and WA7MBL 3,4,and 5.xx codes. All BBS sysops are welcome to it.

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or to *NEPRA PacketEar*
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The Weekly Packet Net meets on Friday @ 8:00 pm on the 146.625 (-600) Haverhill machine.

N.E.P.R.A. / N.Y.E.P.R.A. / E.B.N. network backbone map

rev 3.08 1/20/89

by KA2DEW

BBScall	nodename	:nodecall
KA1MGO-1	MBOS2	:N1CSI-2
WB1DSW-1	MBOS2	:N1CSI-2
N1BGG	MBOS2	:N1CSI-2
WA2PVV	WMA	:K1FFK
WA2WNI-4	ALB2	:WA2WNI-2
K1MEA-4	MTM	:K1MEA-1
WA2UMX	#WMA2	:K1FFK-12
N1API	MTM	:K1MEA-1
KB4N-4	SNHUHF	:K1TR-2
WA2YVL-4	MWU	:W1HJF-4
WA1OJB-4	MWU	:W1HJF-4
WA2RKN-2	ENY	:WB2KMY-1
K1UGM	SNHUHF	:K1TR-2

BBS information listed here shows network connect info for each BBS. Some BBSs are for local use only and will refuse network connects to non-BBS callsigns.

Definitions:
>Backbone nodes are nodes that serve a protected backbone.
>A protected backbone is a path between two or more nodes where there are no hidden transmitters.
>An unprotected backbone is one where hidden transmitters have been allowed.
>User nodes accept connects from man or machine.
>Only protected backbone nodes use the # symbol in their names.
>Backbone nodes accept connects for diagnostic purposes but are unusable for re-connect.
>Digipeating through user nodes is reasonable if retries are unlikely to occur as the timing on TheNET nodes used as single frequency nodes is poor.
>NEPRA/NYEPRA does not want to add new nodes to an unprotected backbone except where it is necessary to insure redundancy.
>Due to the fact that most users use 2 meters for packet and the rarity of 2 meter spectrum we should at all times use higher frequencies to access the network if possible. It is much cheaper to have 1 BBS connect to the network on 220 than to have 20 users do so.

This map shows TheNET and Net/rom nodes which are connected to each other on 50mhz or 220 and above. This map does not show Servers, Users, KA nodes or 2 meter single port nodes.

220/440/900 frequencies used:
221.11 - unprotected backbone in Ct, NY, Ma, RI. (BBSs + TheNET)
221.13 - protected backbone CENTMA, SUD, SNH
221.15 - protected backbone VNH, CENTNH, SWNH
221.17 - EBN lan from Mt. Greylock (BBSs + TheNET)
221.19 - reserved by EBN for NY, Ct region
223.42 - Lan from Hope, Maine (any users)
223.54 - unused (SVT -> NYEPR1?)
223.56 - protected backbone MTM to SVT
223.58 - NYEPRA lan from Grafton NY (any users)

441.025 - NEPRA lan from Windham NH (any users)
441.050 - unused
441.075 - unused
441.100 - unprotected backbone in seNY, Ct, Me (TheNET)
441.125 - protected backbone from SVT to MTM
445.1 - protected backbone CENTNH, SNH, SUD
445.6 - unprotected backbone in NH, Me, Ma (any users)
445.65 - protected backbone CVY, ALB, GURU, NYEPR1

USER PORT INFO:			
site	freq.	mode	callsign
ALB	144.93 -	ALB144:	WA2WNI-1
	223.58 -	ALB220:	WA2WNI-2
GURU	145.03 -	GURU :	K2CBA-1 *
CVY	145.03 -	CVY :	N2GFN-1 *
UTICA	145.05 -	UTICA :	WA2WNI-3 *
ENY	145.59 -	ENYLAN:	WA2KMY-2
	145.01 -	ENY :	WA2KMY-1
WMA	145.05 -	WMA :	K1FFK
MTM	145.05 -	MTM :	K1MEA-1
NYEPR1	145.01 -	NYEPR1:	KA2FQE
SNH	145.07 -	SNH :	K1TR-1
	441.025-	SNHUHF:	K1TR-2 *
CENTNH	145.05 -	CENTNH:	K1BKE-1
VNH	145.01 -	VNH :	WA1TLN-1 *
SWNH	145.05 -	SWNH :	KA1BBG-1 *
MW	145.01 -	MWV :	W1HJF-1
	445.60 -	MWU :	W1HJF-4
CENTMA	145.07 -	CENTMA:	KA1OXQ-1
MBOS	145.01 -	MBOS1 :	N1CSI-1
	221.11 -	MBOS2 :	N1CSI-2
	445.60 -	MBOS4 :	N1CSI-4
SUD	145.09 -	SUD :	W1DA-1 *
PENBAY	145.05 -	PENBAY:	WA1ZDA-1

* = planned user port

bb = emergency power

frequency in italics = unprotected backbone (with Hidden Transmitters)

=This link would be a good idea but no equipment has been put aside at this time.

Networking Rules:

1> No hidden transmitters on backbones.
2> No nodes of poor reliability pass into backbone.
3> No single port nodes.
4> Path redundancy to all sites is necessary.

This map shows the goals of our organizations. Some details are inaccurate at press time. Specifically: CENTMA, MBOS, CENTNH, MW and SNH are all connected by 445.6. MTM talks to CENTMA on 221.11. GURU is still single port. SNHUHF is still on 445.6. CENTMA talks to WMA on 221.17. Albany 445.65 backbone is incomplete.

Comments, Corrections, new info: call me at 603-882-1455 up until 11:30 PM.

KA2DEW - Tadd Nashua, N.H. @WA2WNI
for keyboard to keyboard my station is off of SNH:K1TR-1

Greetings Packeteer. The year 1988 has shown us some incredible advances, not in the technology in our hobby so much as in the organization of our efforts. For the first time we have a packet network that may have a future. This is by no means the first time that we have been able to packet for long distances (several hundred miles). What we have here though is a path of advancement of our network. In the past a new path would open up for a New England packeteer to talk to, say NYC, and within one or two weeks the path became unusable, merely due to loading! That is, once it became good, it became bad! It is the intention of N.E.P.R.A. and N.Y.E.P.R.A. that we create a dynamic network that can be upgraded in a smooth and nondestructive manner. To achieve this we have set down some very basic rules (See the front of this document). We believe that the packet radio public will help us in keeping to these rules because we have shown and will continue to show that our rules make sense!

If you are interested in adding to the system: I recommend that you contact Tadd, Dana, or the sysop of the node that is closest to you or that you go to a meeting of one of the packet organizations and talk to the other people who are involved.

If you are interested in using the system: I consider hacking the network a good thing. Learn all that you can. This is half of the fun! Take the network as far as you can. The theory on this is that the more packeteers we have that can use and understand the network, the more progress we will see in the future and the more fun we will all have. At all times, take the other packeteer by the hand and help him in understanding how to use the network.

Short term objectives:

a>Create redundant link from MBOS to ALB via Mt. Tom and SVT sites.
b>Create path to Auburn, Syracuse and Utica from ALB.
c>Add nodes in Rhode Island and Connecticut.
d>Create path to Pa. to be redundant to EBN backbone.
e>Create path to Maine which bypasses Mt. Washington.
f>Create path to Northern Vermont which bypasses Mt. Washington.
g>Promote emergency power in existing nodes.
h>Experiment with and install higher speed backbone links.
i>Play radio!

Long term objectives:

a>Participate in hidden transmitter free backbone from New Brunswick to Indiana and from Ontario to Maryland.

Clubs:

EBN Eastnet Backbone Network.

This is a consortium of clubs who lend sites and equipment to form a packet network on the east coast. This group is responsible for setting up a packet backbone which runs from Mt. Greylock to Long Island and Meryland through Pennsylvania.

NEPRA New England Packet Radio Association

This club meets monthly at the Honeywell Building in Billerica just off the Concord Road exit from Rt. 3. The meetings are at 7:30PM on the second Thursday of each month. Send to N1BGG @ N1BGG for more information.

This club serves central and eastern Mass, New Hampshire, southern Maine, Rhode Island and northern Connecticut.

NYEPRA New York East Packet Radio Association

This clubs meets quarterly in the Albany, Schenectady, Troy area. Keep an eye on your local BBS or write to WA2WNI @ WA2WNI.

This club serves eastern Upstate New York.

Networking Contacts:

Tadd Torborg, KA2DEW - NEPRA network director
603-882-1455 before 11:30 PM or @ WA2WNI or KA2DEW on 145.07 off the SNH node.

Dana Jonas, WA2WNI - NYEPRA president
Contact @ WA2WNI or WA2WNI-4 on 144.93 off the ALB144 node.

TheNET Operation: (NordLink/TheNET software by DF2AU)

To use a network node, you connect to it. As soon as you get a *** CONNECT message back you can type a command which the network node will interpret. The commands available on a user port are Ident, Nodes, Routes, User, Connect, CQ, Parm and Sysop. Only the first character of each command (except CQ) need by typed. Some of the commands require additional information which is typed on the same line as the command.

Nodes: This command is used to ask the node about the other nodes on the network. Information that may be gotten includes all of the nodes that this node knows about, the user nodes that this node knows about or the next node in the path that this node will use to connect to another node. Usage- Type N <return>. The network node will return with a list of all of the user nodes that it knows about. Type N * <return>. The network node will return with a list of all of the nodes, user or hidden, that it knows about. A hidden node is one whose name begins with a # sign and is used as a backbone port with no user services. Type N nodename <return>. The network will return with a table of callsigns for the neighboring nodes which are the paths that the node might take to get to the nodename specified. Each line of the returned table has a > if the path is in use, the callsign of the path, the quality of the path and a 1 if the path is a serial port to another TNC in the same rack or a 0 if the path is over the air.

Routes: This command, entered as R <return> will return a table of adjacent nodes (neighbors). All of the neighbors will be listed. On each line of the table is a > if the path is in use, the callsign of the neighbor node, the quality of the path, and the number of nodes the neighbor node is telling this network node about. At the end of each line, a I would indicate that this neighbor has been "locked in" by the sysop. Otherwise the nodes listed were detected by this node via automatic routing broadcasts which occur about once per hour.

User: This command, entered as U <return>, will return a list of the users of the node. This does not include stations who are connected through the node.

Param: This command shows the current numerical values set up as parameters for the node. A NordLink or Netrom operations manual will be required toomake any sense out of this.

Ident: This command will return with up to 160 characters of text which contains information programmed by the sysop. This should include the node's location, its uses, what BBSs are available and where to go for more information. If you are playing around looking through the network you should use this command at each node.

Connect: This command is used to connect to another node in the network or to a user available from the node you are connected to. Usage is C callsign <return> just like the command for a TNC1 or TNC2. You can, with this command, connect to another node using the nodename, i.e. C WMA <return>. Note that this command will not work on hidden nodes in the NEPRA or NYEPRA systems.

Sysop: This command followed by the password allows the sysop to make changes to the routes table or parameters.

TheNET notes:

The callsign that a node uses for a user who is exitting a node is the entry callsign subtracted from 15. Thus if the user is KA2DEW-0 and he connects to a node, when he connects from any node in the network he will be seen as KA2DEW-15. KA2DEW-2 becomes KA2DEW-13 etc...

Network Node Hardware:

Each network site consists of 2 or more TNC2 clones tied together by the serial port on each TNC. If there are more than 2 TNCs a diode matrix box is used to patch the 4 lines from each TNC to each of the other TNCs. Connected to each TNC at the radio/audio port is a radio. Each radio is on a different frequency. The radios shouldn't interfere with each other. Each site has a backbone connect port to tie it into the network. Each site has a user port to allow users, both human and computer server (i.e. DOSgate, Unix, BBS etc...) to talk into the network or get connected to from the network. It is the considered opinion of the network designer that a site with no user port is probably bad. This would only invite abuse of the backbone by users.

Many sites have 4 or more TNCs. Each link in the backbone is on a different frequency to avoid hidden transmitter syndrome and therefor each link at each site needs a separate TNC/node.

Hidden Transmitter Syndrome:

This is the bane of most earlier packet networks. A system with 3 sites:Site A and Site C are far enough apart that they don't hear each other at all. Site A and site C are near cities. Each has a BBS or 2. Site A has traffic to go to site C and site C has traffic to go to site A or B. Site A will transmit when it doesn't hear anything. Site C will do the same. Site B hears both A and C. If C is transmitting and A decides to transmit, both messages are lost. If A is waiting for a reply from B and site C is talking, then site A has to wait. If C is talking for too long, site A will retry, thus trashing the message C is sending to B. The upshot of this is that if the A to B link was on a different frequency than the B to C link, the observed performance increase is greater than 5 times, regardless of the baud rate! This is why it is the policy of NYEPRA and NEPRA to stay away from hidden transmitters on any new paths that we are developing.

Support:

We would like to take the time (and space!) to give our thanks and appreciation to the clubs and individuals who have helped our cause! Thankyou!

MTARA, NOBARC, Saratoga County RACES, PenBay ARC, GURU, CVRC etc etc...!

Texas Packet Radio Society, Inc. Links Texas at 9600 Baud!

TPRS was founded in 1985 as an educational, public service, and scientific research non-profit corporation. The primary goal of the Texas Packet Radio Society is to design and research amateur radio packet networks.

In 1987, the Texas VHF-FM Society commissioned the TPRS to coordinate digital communication networks within the state of Texas. Both organizations have recognized the need for reliable network systems to handle large volumes of packet radio traffic efficiently.

TPRS is currently organizing state-wide working groups to cover various networking topics. New groups are planned to form as needed to provide channels for discussion and to help provide direction for that area of digital communications. The current major planned working groups are Netrom, TCP/IP, and TexNet. TPRS hopes that these working groups will help promote networking in Texas.

TexNet

TPRS has been establishing a digital packet network protocol, a standard hardware package for the network nodes, and conducting on-the-air tests of the software modules that implement the TexNet network.

The basic design philosophy of TexNet is of an open, inexpensive, multi-resource, high speed "backbone" with access through multi-connect capable local nodes. On the high speed side, TexNet is a 9600 baud network system. For local access, compatibility with the typical 2 meter AX.25, 1200 baud, AFSK/FM station is the operational norm. Other baud rates and modulation techniques can be supported on the primary user port or a secondary port. The system is totally compatible with both versions of the AX.25 protocol specifications for user connections. With these general specifications, TexNet has been designed and tested to enable all users to take advantage of this high speed, full protocol protected packet network system.

Each node offers, in addition to TexNet access, local area digipeater service, 2 conference bridges for full protocol protected round-table or net operation, a full multi-connect, multi-user mailbox system, a local console for installation and maintenance setups, a debugger module for long distance and local software monitoring, and a weather information server for the regional weather teletype wire loop.

The TexNet network system has been operational since October 1986. Use of the TexNet system is open to all amateur operators. TPRS has been coordinating the installation of the TexNet system. Currently the network runs from Dallas to Rockport on the gulf. TexNet boards have been distributed to California, Alaska, Belgium, and Japan. Network nodes have been built primarily by local groups. Further expansion of the system depends entirely upon the amateur radio community.

INFORMATION

TPRS is interested in spreading our information and research efforts as widely as possible. We want other groups involved with network efforts to get in contact with us. We will provide information for those amateur packet groups that are interested in this system for their areas. In addition, TPRS has been raising its level of general packet information to help support packet radio operators in general within Texas. If you would like more information concerning TPRS or TexNet, please drop a letter to:

Texas Packet Radio Society, Inc.
P.O. Box 831566
Richardson, Texas 75083

TPRS MEMBERSHIP

TPRS membership is widespread with most members located in Texas, but a few members are located in other states and in DX locations. Membership is open to any interested person.

If you are interested in becoming a member and receiving the TPRS Quarterly Report, please send your name, address and call to the address above and we will send you the necessary information.

73, de KB1HE @ WB1DSW
John, Manchester, NH

NEWS

by Syl, N1DKF

All users who log into local PBBS's are asked to supply informatiom such as name, ZIP code, home PBBS, city, state, as well as callsign. This information is used in several ways in the packet network. First it is stored in a database at the logged PBBS. Each 24 hrs these PBBS wake up and check the user file for updated or new information. The new information (dated) is automaticly loaded into a message addressed to WP @ WD6CMU; WP (White Pages) at WD6CMU is a VAX computer which reads all this info into a Global (meant in literal sense) database which keeps a listing of all those who have signed onto the packet network. The file WP.DOC available at most PBBS's explains how to simply query WP as to name, location, and home PBBS of the person who's call you inquire about. Thus you can easily find out if your friend in Ohio or Germany or Australia is on packet and if so where to send messages. This points up the need to provide meaningful information (ie, we might know NK is N. Kingstown but somebody in Kentucky would not; full city & two letter state code is essential). Correct ZIP (5 digits only) is important because message handling schemes based on ZIP location are cropping up.

To lessen the amount of long haul forwarding required to query WP many systems act as WP Cache Servers; this means that EVERY update which passes through on the way to the Global WP server is recorded locally also. As your query message moves toward WP the first PBBS that has the required info will kill the query message and return the information to original sender with message signed "WP @ x!xxx" or whatever. If N1DKF has the info and you send a message like this the reply message will be waiting about 4 seconds after you close the query message (de WP @ N1DKF). You can also check local info by entering "P *call*".

Your part to make this work well is to give usable information and to declare one full service PBBS as "home". You are welcome at any but please give each one you log onto the same info; when you change, please update at any PBBS you frequent.

Full service PBBS's are defined as those which support both inbound and outbound forwarded mail and provide file service; SSID's (-2,-7) should NOT be supplied to WP and valid calls only, an alias has no meaning outside of local area. If you wish mail to you to be sent to a "mini BBS" you need only pick a local full service PBBS as home and arrange with local SYSOP to peel off @ *call* field and forward your mail.

New stuph at N1DKF includes a TCP/IP directory with a growing number of files and another with lists of PBBS's arranged by state with a "DX" listing added in.

How to Send 'Formal' NTS TFC on Packet

First, you must know the city and state that your messsage is going to and the Zipcode of the addressee.

You enter the message into the BBS by sending:

ST ##### @ NTSST

where #### is the addressee's Zipcode and ST is the two-letter abbreviation of the addressee's state. (Note: Massachusetts (MA) is broken into EM and WM. Use NTSEM or NTSWM if you know which section it is, otherwise just NTSMA. MD and DC are separate and should be sent as NTSDC or NTSMD. West Virginia is sent as NTSWV.)

For the next entry (ie., 'TITLE'), enter:

(CITY/PHONE-IF KNOWN)

Next enter the message itself. The message should follow the ARRL message form as shown in the ARRL Handbook. (For example, see 1987 Handbook, page 38-16). If you need more information on this, let me know at the address at the bottom or send me a packet note.

Following is a sample entry and message:

ST 02657 @ NTSEM
PROVINCETOWN/555-1234
NR 987 R HXG K1GGS 13 CONCORD MA JUL 21
WENDY KINCAID KB1AF
BOX 1435
PROVINCETOWN MA 02657
617-555-1234
MANY THANKS FOR THE REPORT X KEEP UP THE GOOD WORK X 88
RUSTY

If any further questions, drop a packet message into the nearest BBS or phone me at home.

Rusty Hemenway, K1GGS, ASTM/P
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Concord, MA 01742

Packet address: K1GGS @ K1UGM

Home: (508) 371-1731
Work: (617) 223-8404

HANK OREDSON

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PE: How do you come to know so much about Japan?

WORLI: In February 1988, they were having a giant organizing effort—a major conference. I was invited to attend, all expenses paid, gratefully did so and have kept abreast of affairs over there through JA1KSO.

PE: Very interesting. Speaking of "MailBoxes", we've all seen the arrival of AA4RE's Multi-Connect BBS software recently. What do you know about it and what can you tell us about it?

WORLI: First off, I'm really not involved in that project as heavily as some people think. I do have a business to run and other things I like to do. From what I see, it looks and "feels" like a WORLI system except that he allows use of the multi-connect capability of the newer TNCs *(Terminal Node Controllers -ed)*.

I guess I'd just have to say that from my perspective, we already have networks jammed to the teeth with retires and crashes brought on by the nature of the AX.25 protocol. I don't think most people really comprehend that while their TNC is set to 1200 baud on the RF port, in many given situations, the more stations you add to a given channel the worse things become in terms of congestion—thus your throughput rate is roughly divided by the actual stations that everyone is able to hear. Thus 1200 baud becomes more like 50 baud on a busy channel crammed with retires and failures. Multi-connect from a BBS standpoint only adds to the futility. The full weight of the system's multiple attempts to resend the same packets over and over as the approaching acknowledgements fail to satisfy the sending TNC, bring further doom upon a channel. This is why I, for one, have stayed away from doing anything of this sort. At 1200 baud—it'll bring most networks to their knees!

By the way, I'm glad to hear you use the word "MailBox" instead of BBS. I have always called my program a "MailBox" from the very beginning.

PE: What will the next version of the Mailbox look like?

WORLI: Oh, I don't really have any firm plans in mind for it. It does exactly what I think needs to be done at this time. On the other hand, I would say that perhaps my next task would be to incorporate some specific kinds of "server" functions to do specific tasks related to specific needs. And of course, there are always those nifty little suggestions that come from just about anywhere not to mention "bug" fixes. Version 9.03 will probably be it for now. But, stay tuned. . . .

PE: Speaking of new features, the RoundTable function came out in V 9.01 but was pretty well undocumented and caused some of us some problems. What was the force behind that?

WORLI: Well, you know, I do listen to folks when they ask for things. I do try to give due consideration where I feel it's necessary. The request for a RoundTable function came from an ARES group who desparately pleaded for some way to conduct their net-type of operation. I stuck it in. They used it once, maybe twice and went right back to their old way of sending E-Mail back and forth. I guess it wasn't as useful as they first thought! I may take it out if there's no real need for it. In all of my code, I try to the "Nth" degree to keep it as tight, compact and as short as possible. My philosophy is I consider memory to be at premium.

Incidentally, let me comment on the lack of documentation. I can't do both—period.

The MailBox program now supports passwords for remote SYSOPs (people who do maintenance work on MailBox systems). I did this at the request of some European MailBox operators who were being plagued by "packet terrorists" bent on destroying their network. I know this feature is one that I'll probably keep.

PE: I quite agree. You know, the code is so "rich" at this point I frankly don't see how one single person could keep the documentation whole. Now, where do you see the future of packet radio going? Is TCP/IP going to take over?

WORLI: The first question is an interesting one, one which I get asked all the time. My answer is: I'm not certain. We have lots of good applications out there now just beginning to come to the fore. We need to move the network(s) faster. We need some satellite links between major areas of the country and around the globe—more than is available now. We need to educate users and SYSOPs alike. Twenty minutes ago, we looked at NM1D's DOSGate, a real slick tool that could be used for a variety of useful purposes. That's available now and I hope to see more of them spring up.

I also get many questions about TCP/IP and what it's future is. My opinion—it's nice but it doesn't do anything more than the current systems can do. I know that TCP is getting more play over here in this area now. I'm all for new things.

PE: It's been really great seeing you again and getting these insights. All of us want to thank you for your tireless efforts in providing such a fine system.

WORLI: Oh thanks. I'll be back some day soon I trust, and be able to make a NEPRA meeting!

PE: We all hope you'll be back soon. 73.

The day was filled with this kind of back-and-forth. When he and Ilze finally departed later that evening, I couldn't help but think I had just been treated to a real happening.

NEPRA **PacketEar**

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MEMBERSHIP in NEPRA is open to all amateurs with an interest in packet radio. Annual dues are $15. The expiration date for current members is given on your mailing label. If the date has been circled in red, the expiration date is imminent. The address for new memberships or renewals is given above.

NEPRA MEETINGS are held at the Honeywell plant cafeteria in Billerica at 7:30 PM on the Second Thursday of each month. Take Route 3 to exit 27, Concord Road. Proceed West a couple of hundred yards and you will see a sign and entrance to Honeywell on the left. Parking and entrance are at the rear of the building. Talk-in is available on 147.12 MHz.